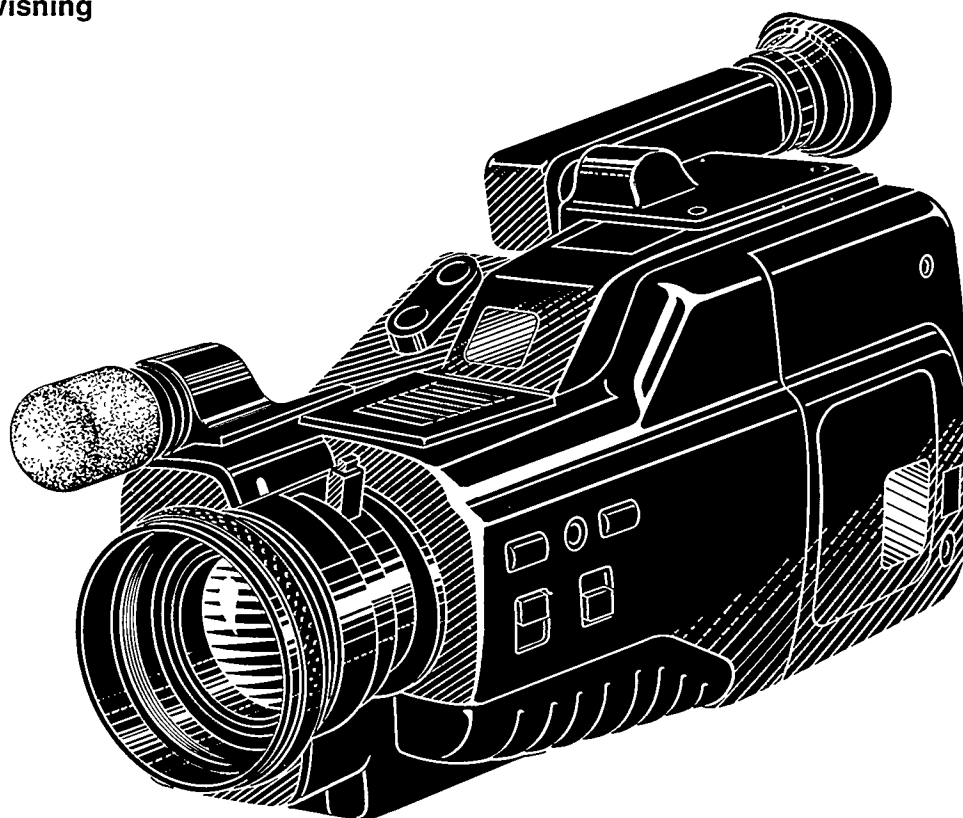


VKR 6843



Operating instructions
Bedienungsanleitung
Mode d'emploi
Gebruiksaanwijzing
Istruzioni per l'uso
Instrucciones de manejo
Bruksanvisning



68 VKR 43

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Features

IMPORTANT

Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

WARNING

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

VHS-C Camcorder

- The rating plate is on the bottom side of the VHS-C Camcorder.

AC Adapter SBC5413

- The rating plate is on the bottom panel of the unit.
- This model conforms to the EC directive (for radio interference) 82/499/EEC.

FOR YOUR SAFETY

DO NOT REMOVE THE OUTER COVER.

To prevent electric shock, do not remove the cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

HQ (High Quality) picture system

VHS-C Camcorders carrying the HQ symbol mark feature the new VHS High Quality picture system. This system assures complete compatibility with VCRs that use the conventional VHS system.

Precautions

Please read these cautions before operating the VHS-C Camcorder.

Video head clogging:

The video heads are the means by which the VHS-C Camcorder places picture signals on the tape during recording, and reads picture signals from the tape during playback. If these heads become dirty and clogged from long use, the signals can no longer be recorded correctly, and the playback picture will be distorted accordingly. This is the case, for example, during the playback of a tape, the sound of which is reproduced normally, but no picture is seen, or the picture is greatly distorted. When such symptoms occur, have the VHS-C Camcorder checked by qualified service personnel.

If condensation forms inside the VHS-C Camcorder:

Condensation (dew) forms when warm air comes in contact with a cold object, for example on a window in a heated room in winter. Condensation may form in the VHS-C Camcorder and damage the tape and the video heads, if:

- The VHS-C Camcorder is in a room where the heater has just been switched on.
- The VHS-C Camcorder is in a room with steam or high humidity.
- The VHS-C Camcorder is brought from cold surroundings into a well-heated room.
- The VHS-C Camcorder is suddenly brought from cool surroundings, such as an air-conditioned room or car, to a place which is hot and humid.
- When condensation has formed inside the VHS-C Camcorder, the "DEW" indication in the EVF will flash and a few seconds later, the unit will switch itself off to protect the tape and the video heads.

After a while, switch the unit on again and make sure that the Dew mark is not displayed any more. Then, wait about 1 hour before operating the VHS-C Camcorder again. Depending on the surrounding conditions, it may take several hours before the VHS-C Camcorder can be used again.

- As condensation forms gradually, it may take about 10—15 minutes before the VHS-C Camcorder switches itself off after a change of working environment.
- In an extremely cold place, condensation may freeze and turn into frost. In this case, it may take quite some time for the frost to melt, turn into dew and evaporate.
- When you bring the VHS-C Camcorder from a very cold place, e.g. the ski slopes, into a heated room, keep it in a tightly closed plastic bag or similar to prevent condensation from forming inside the VHS-C Camcorder.

Keep the VHS-C Camcorder away from oily smoke and steam

Protect the VHS-C Camcorder from humidity and dust

Surrounding conditions:

Use the VHS-C Camcorder under conditions where the temperatures are between 0°C and 40°C, and where the humidity is between 20% and 80%. To avoid deformation of the outer case or other damage, do not leave it exposed to direct sunlight for any length of time, also never leave it in a closed automobile.

Keep the VHS-C Camcorder away from heaters

Keep the VHS-C Camcorder away from TV sets:

Do not place the VHS-C Camcorder near a TV set because it might impair the picture and sound quality of the recorded tape, and/or adversely affect the performance of the VHS-C Camcorder.

Keep magnets away:

Never bring a magnet or magnetized object such as fluorescent lamps, motors, electric clocks and battery operated toys etc. close to the VHS-C Camcorder because this could adversely affect its performance.

Keep the VHS-C Camcorder away from areas with strong electric fields:

The picture may become distorted, when the VHS-C Camcorder is used in places with strong electric fields, such as near TV or radio antennas.

Never put any objects inside:

Never insert any object other than a video cassette into the VHS-C Camcorder. If any object is dropped into it or if any liquid is spilled into it, consult qualified service personnel. Operating it with some foreign matter inside may cause fire or electric shock.

No fingers inside:

Touching internal parts of the VHS-C Camcorder is very dangerous and may cause serious damage to the VHS-C Camcorder. Do not attempt to disassemble it. For internal inspection, adjustment or repairs, consult qualified service personnel.

Handle with care:

Never drop the VHS-C Camcorder or expose it to strong physical shocks. Shocks during use may result in abnormal operation and performance.

Appearance of smear distortion:

Smear distortion is a peculiar characteristic of the CCD device. It appears as a bright vertical stripe on the screen when the VHS-C Camcorder is aimed at spot lights or other bright lights and light reflecting objects. To avoid this problem, make sure not to aim the VHS-C Camcorder at such strong light sources during shooting.

Cover the lens with the cap after shooting

Keep the VHS-C Camcorder away from strong light:

Do not expose the VHS-C Camcorder to strong light, because the heat from it may cause deformation or other damage.

When the VHS-C Camcorder is not being used:

Remove the video cassette and switch the VHS-C Camcorder off with the Power switch.

Keep insecticide spray away:

Never spray things like insecticide on the lens and body of the VHS-C Camcorder. Also, never leave rubber or vinyl objects in contact with any part of it for a long time, because the colour might change and the body surface might be damaged.

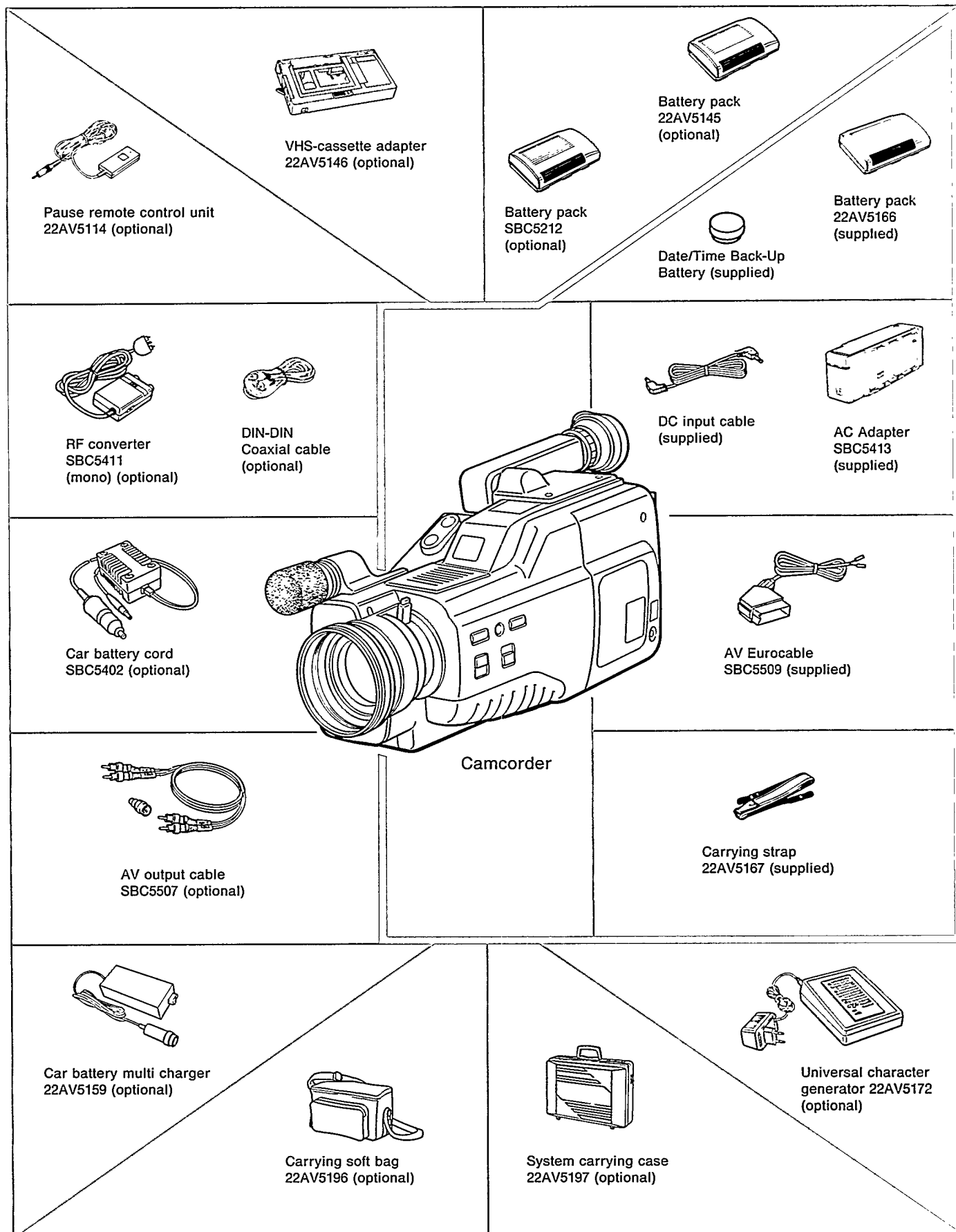
Never place the VHS-C Camcorder with the cassette compartment side facing down:

Never use the VHS-C Camcorder with the cassette compartment facing down as this might cause uneven winding and slacking of the tape.

Cleaning the VHS-C Camcorder:

- The body of the VHS-C Camcorder is made of plastic materials. Never use benzine, thinner or other chemicals for cleaning, because the colour might be changed and the case surface might be damaged.
- Wipe the case and operation panel with a soft, clean cloth. For persistent stains, use a cloth moistened with mild detergent and water, and then wipe with a dry cloth.
- Clean the lens only with a blower brush (used for photo cameras) or a special lens cleaning tissue (used for glasses and cameras).

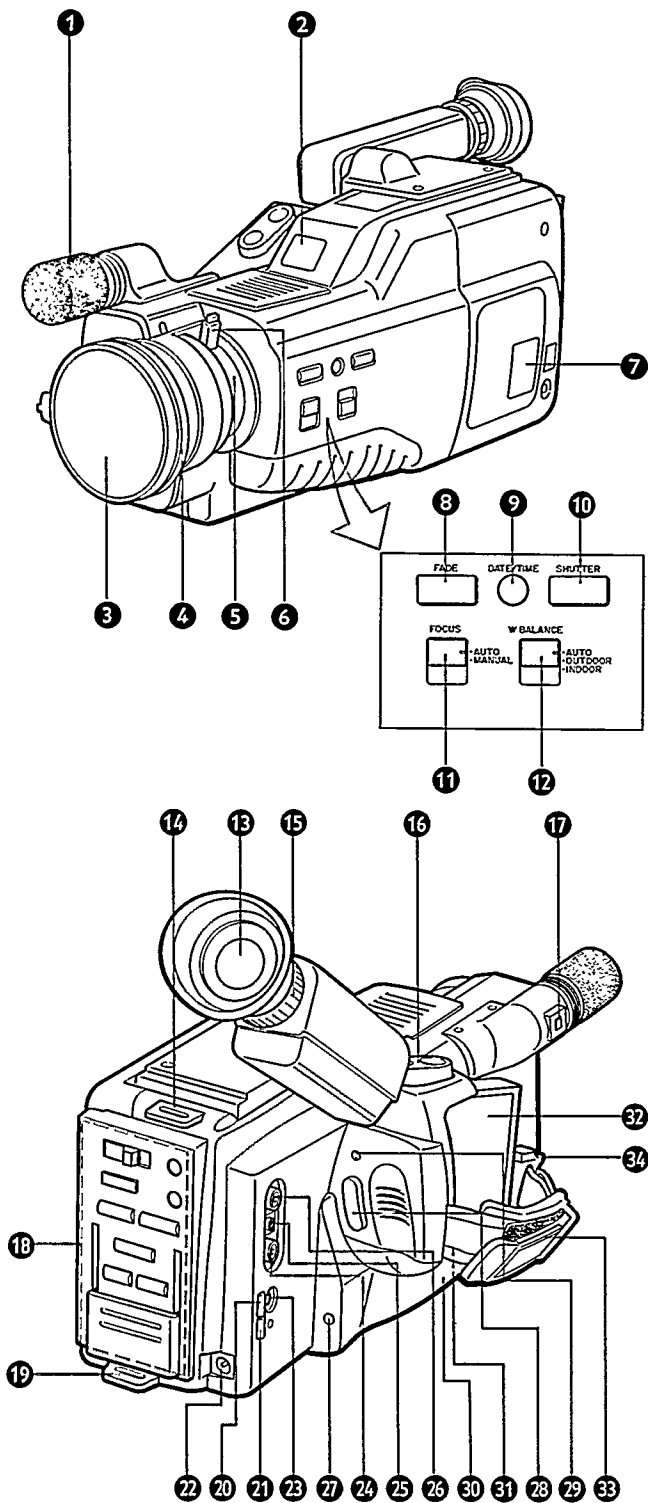
Camcorder accessories



Note:

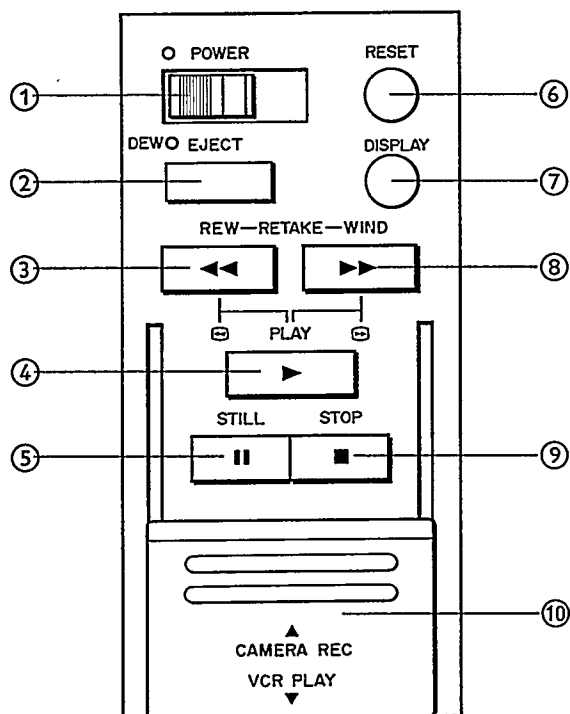
TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

Controls and connectors



No.	Name	Page
1	Built-in microphone	—
2	White balance sensor window	16
3	Lens cap	13
4	Lens hood	—
5	Focus ring	18
6	Manual zoom lever with macro button	18
7	Cassette compartment	12
8	Fade button	19
9	Date/Time selector	21
10	High speed shutter selector	19
11	Focus mode selector	17
12	White balance mode selector	16
13	Electronic viewfinder	7
14	Fitting for carrying strap	11
15	Eyepiece corrector control	11
16	Power zoom control buttons	18
17	Microphone sensitivity selector	13
18	General operation controls	6
19	Fitting for carrying strap	11
20	Tracking up/date set button	23
21	Tracking down/date shift button	23
22	DC input socket (DC IN)	17
23	Remote control socket	28
24	Audio output socket	24
25	RF DC output socket	25
26	Video output socket	24
27	Earphone socket	28
28	Start/Stop button	13
29	Tally indicator	13
30	Battery compartment for auto date/time	20
31	Tripod receptacle	28
32	Battery holder	8
33	Grip belt	13
34	Battery locking lever	9

18 General operation controls

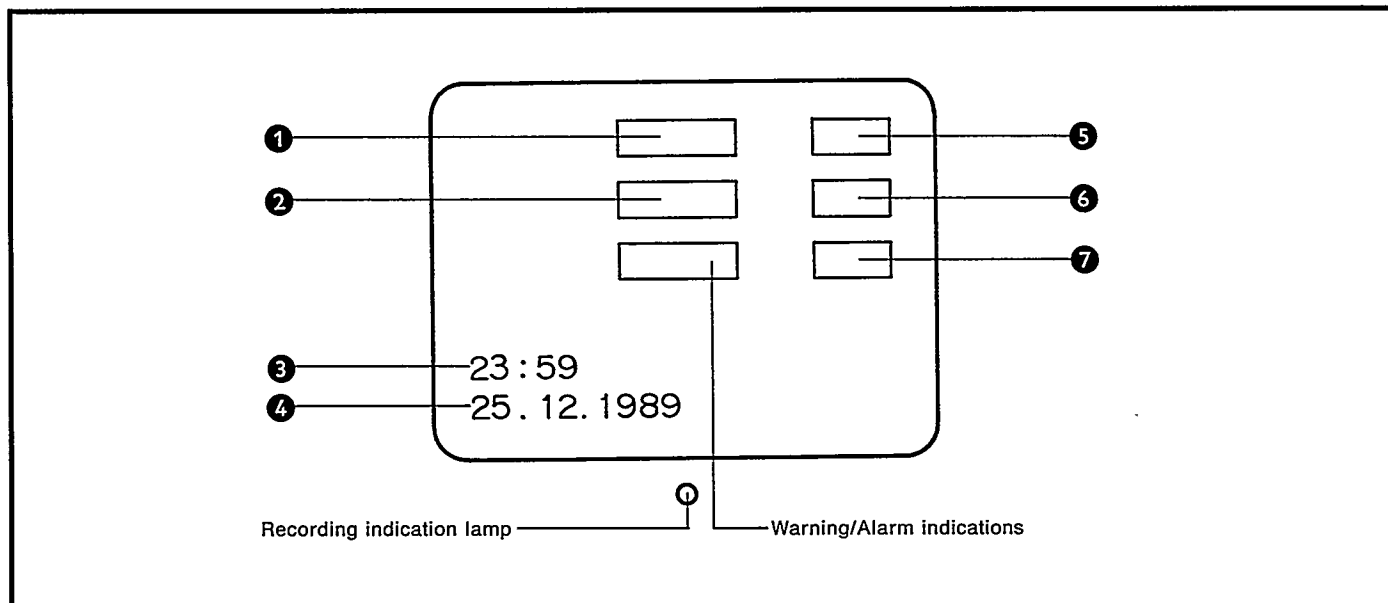


- ⑩ **Function of the Camera/VCR selector cover**
- Closed : For camera recording.
 - Open (as illustrated) : For other operations than camera recording.

No.	Name	Page
①	Power switch (POWER)	13
②	Eject button (EJECT)	12
③	Rewind/Review button (REW)	14
④	Play button (PLAY)	22
⑤	Still button (STILL)	22
⑥	Reset button (RESET)	23
⑦	Display button (DISPLAY)	23
⑧	Wind/Cue button (WIND)	14
⑨	Stop button (STOP)	22
⑩	Camera/VCR selector cover	13

Electronic viewfinder

The following indications are displayed in the Electronic Viewfinder (EVF) to inform you of the operating conditions of the VHS-C Camcorder.



Warning/Alarm indications

- ① **Remaining battery power indication**
E _ _ _ F : The ' _ ' indications begin to disappear from right to left as the power of the battery pack weakens.
- ② **Counter indication**
M0123 : Tape counter
1:23 : Used time counter
- ③ **Clock indications**
- ④ **Date indications**
- ⑤ **Tape running indications**
REC : Recording mode
PAUSE : Recording pause mode
▶ : Play mode, Retake (In forward direction)
|| : Still mode
▶▶ : Wind/Cue mode
◀◀ : Rewind/Review mode, Retake (In reverse direction)
- ⑥ **Manual white balance indication**
OUT : Outdoor
IN : Indoor
- ⑦ **High speed shutter mode**
1/500 : 1/500 sec.
1/1000 : 1/1000 sec.

	There is little battery power left. The VHS-C Camcorder will be switched off in a few minutes. Replace the battery pack by a fully recharged one.
	It is impossible to record because the erasure prevention tab of the cassette is not intact.
	During recording, the tape has almost reached its end. Replace the tape with a new one. The indication will remain lit when the tape has reached its end.
	When condensation has formed inside the VHS-C Camcorder, the "DEW" indication will flash and a few seconds later, the unit will switch itself off.
	The video head is dirty. Please stop recording and request a qualified service personnel to clean the head.

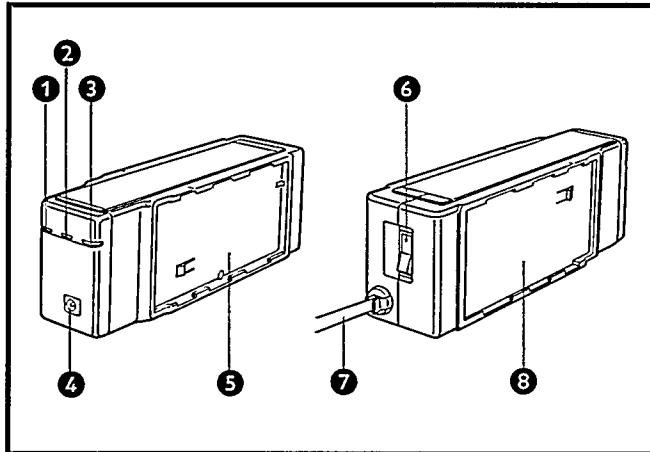
- Some of the above indications may light up alternately at the same place in the EVF to indicate the corresponding operating condition or warning.

Power supply system

AC Adapter (SBC5413)

Precautions

- Avoid violent shocks and rough handling of the unit.
- Do not allow liquid to spill into the unit.
- Do not place heavy objects on the unit.
- When unplugging the mains cord or other connection cords, be sure to grasp the plug, not the cord.
- When listening to a radio while the AC Adapter is in operation, the radio reception may be distorted. In this case, move the radio away from the AC Adapter.

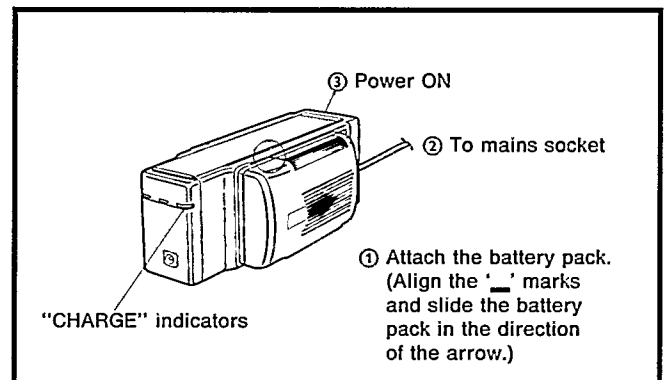


Controls and components

No.	Name	Page
①	Charge (1) indicator lamp	8
②	Power indicator lamp	—
③	Charge (2) indicator lamp	8
④	DC output socket	10
⑤	Battery holder (2)	8
⑥	Power switch with indicator lamp	8
⑦	AC mains lead	8
⑧	Battery holder (1)	8

Battery pack

Charging the battery pack



- When charging an exhausted battery pack, the charging indicator lamp will go out about 90 minutes after charging starts. However, the battery pack should be charged at least 3 hours for extended use.
- The VHS-C Camcorder can be used continuously for approx. 60 minutes with a fully charged battery pack.
- The battery packs cannot be charged while the AC adapter is being used to power the VHS-C Camcorder.

To charge two battery packs simultaneously, attach one each to the battery holder on either side of the AC Adapter.

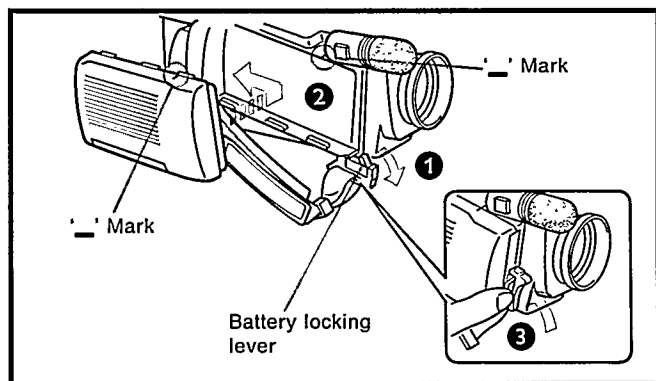
Charging indicator lamp

Lit : The battery pack is being charged.

Not lit : Charging has been completed.

Flashing : The battery pack is in the waiting condition for charging. (When two battery packs are attached, one of the indicators will be flashing.) After the charging of the first battery pack is completed, the indicator that was flashing will now be lit, and the charging of the second battery pack will start.

Attaching



- ❶ Pull the battery locking lever forward and turn it down.
- ❷ Align the 'Mark' and slide the battery pack backward (←).
- ❸ Hold the part of the battery locking lever where the belt is attached and turn it up until it locks with a click.

Removal

Wait about 10 seconds after switching the VHS-C Camcorder off with the Power switch, before removing the battery pack.

To remove the battery pack, turn the battery locking lever down and slide the battery pack forward until it is released.

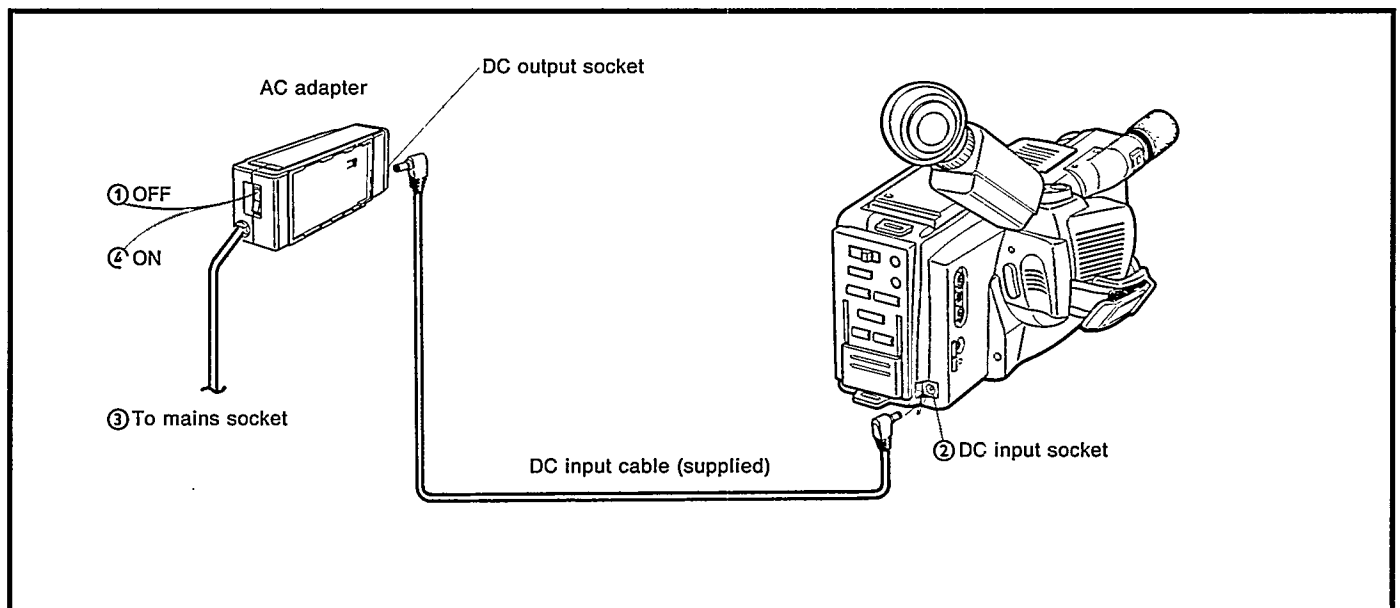
- If the battery pack is removed during recording or playback, the tape remains wound around the video head cylinder and could become damaged. Before removing the battery pack, put the VHS-C Camcorder in the stop mode and then switch it off with the Power switch.

Cautions for using battery packs

Be sure to charge the battery packs before using them.

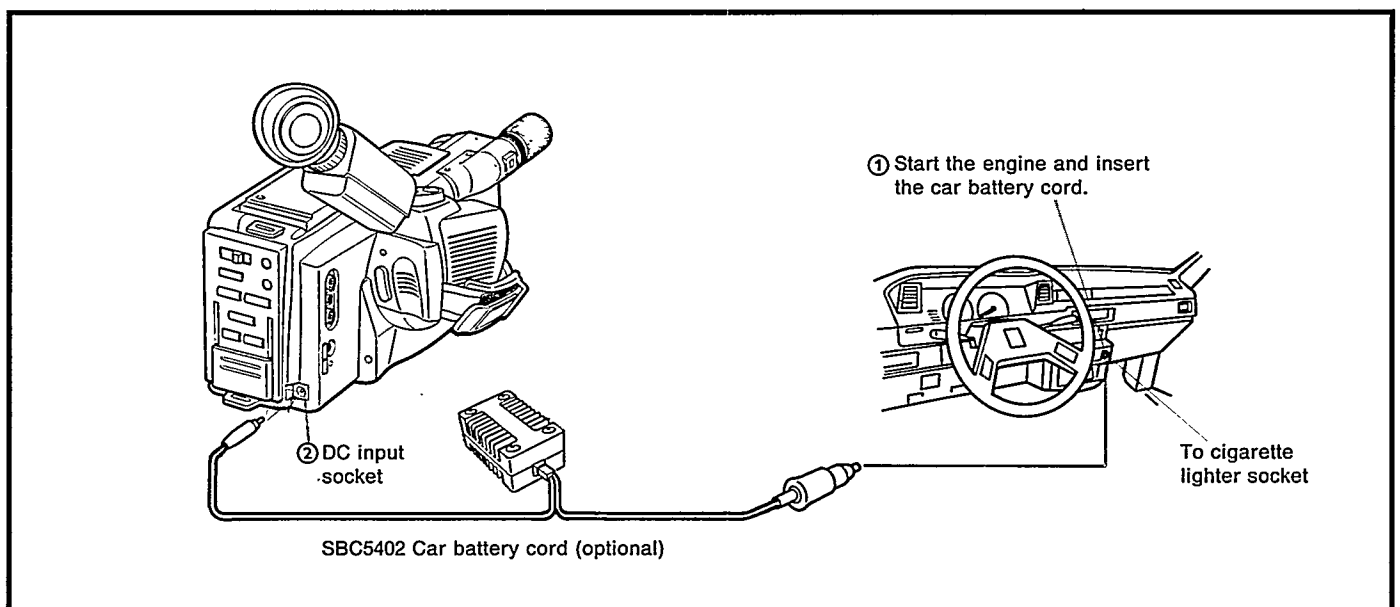
- Pay attention to the following points to avoid danger.
 1. Do not throw the battery pack into fire.
 2. Do not short-circuit the poles of the connector.
 3. Do not disassemble or reconstruct the battery pack.
 4. Use only the supplied AC Adapter to charge battery packs.
- Follow the instructions below to avoid damage to the battery packs or reduction of their service life.
 1. Never subject the battery packs to strong shocks or drop them.
 2. Do not recharge a battery pack that is already fully charged.
- During operation of the VHS-C Camcorder or during recharging, the battery pack may become warm however this does not pose any problem.
- The service life of a battery pack has its limits. If the operation time of a battery pack in spite of normal recharging becomes so short that its normal use for shooting is no longer possible, it should be replaced with a new one.
- The function of the battery pack is based on a chemical reaction. Use it according to its characteristics.
 1. Charge the battery pack within a temperature range of 10°C—35°C. If charged at lower temperatures, the chemical reaction cannot take place optimally, causing the performance of the battery pack to deteriorate. At higher temperatures, the battery pack cannot be charged completely.
 2. Store the battery pack in a cool and dry place. If exposed to high temperatures for a long time, the battery life will be shortened and the self-discharging process will be increased.
 3. Charge the battery pack before using it because self-discharging may occur if it has not been used for a long period of time.
 4. When not using the battery pack, remove it from the VHS-C Camcorder or the AC Adapter.

AC adapter (supplied)



- When a battery pack is attached to the AC Adapter, the VHS-C Camcorder cannot be supplied with power. Therefore, be sure to remove the battery pack.
- Never use any other AC Adapter than the specified one.

Car battery cord (optional)

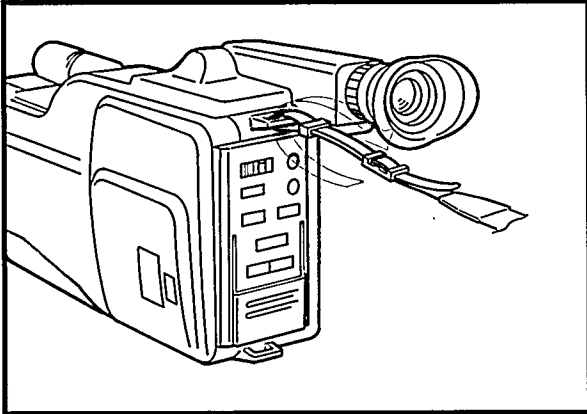


- The car battery cord can only be used with 12 V DC negative-grounded vehicles. 24 V DC or positive-grounded vehicles cannot be used.
- If the supplied voltage from the vehicle drops too low, the VHS-C Camcorder will switch off automatically to prevent any malfunctioning. When this happens, wait about 10 seconds before switching the VHS-C Camcorder on again.
- It is not possible to recharge the battery pack by using the vehicle's battery and/or the car battery cord.

Basic preparations

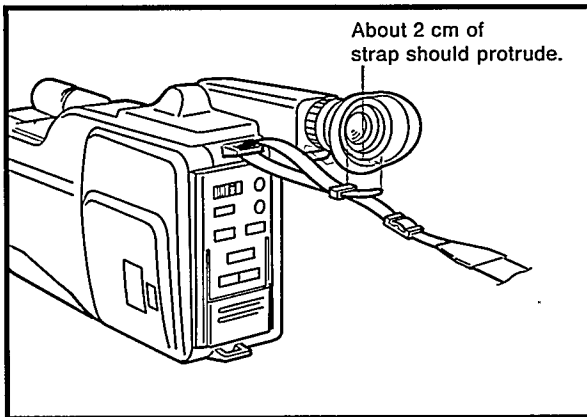
How to attach the carrying strap

1



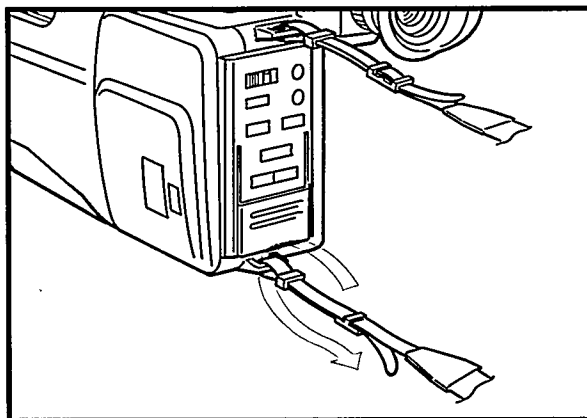
Pass the end of the carrying strap through the slit of the carrying strap holder on the upper part of the rear of the VHS-C Camcorder.

2



Securely attach the end of the strap.

3

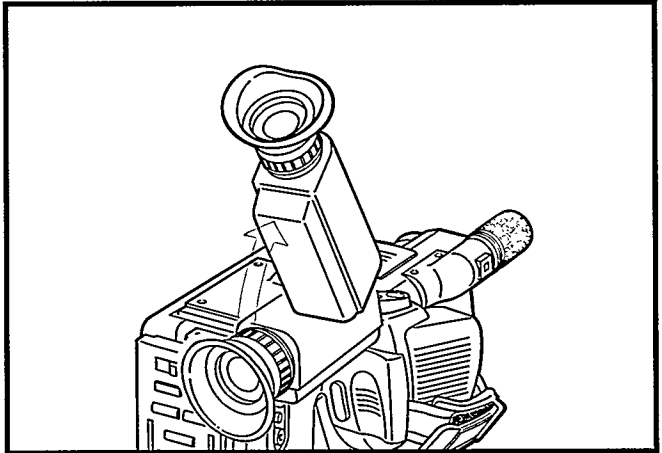


Attach the other end of the carrying strap at the lower part of the rear of the VHS-C Camcorder in the same way as mentioned above.

Electronic viewfinder

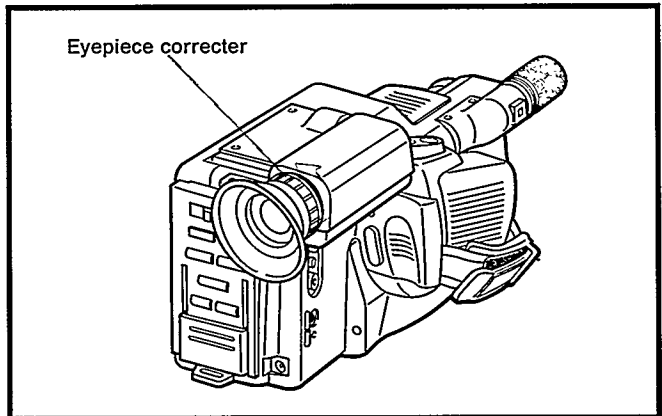
For low-angle shots

The electronic viewfinder can be turned upward. This is convenient for taking low-angle shots. The EVF can also be moved back and forth.

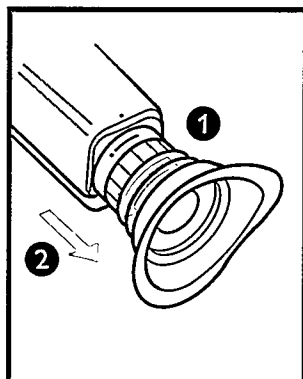


Eyepiece corrector

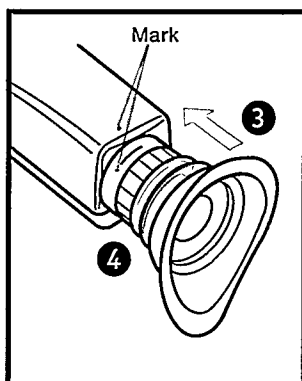
This control makes it possible for people who wear glasses to adjust the eyepiece to their eyesight.



For viewing the EVF with the left eye



- Turn the eyecap counterclockwise to remove it.

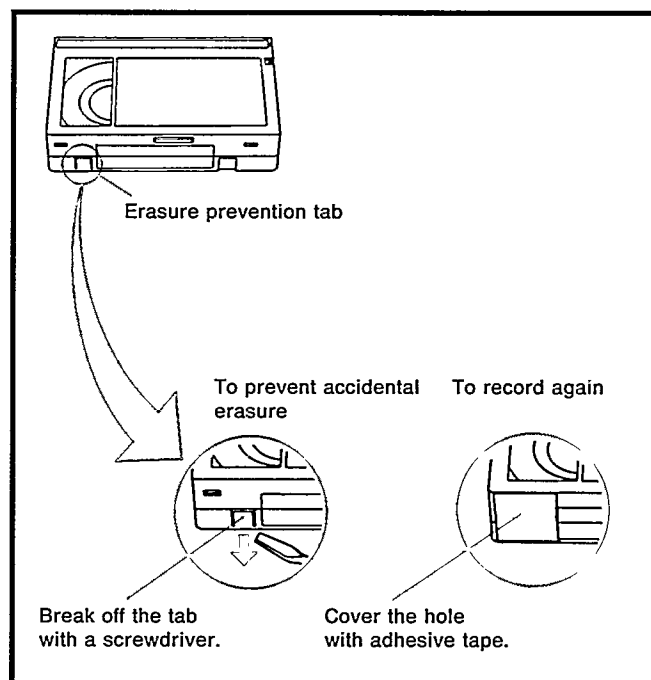


- Turn the eyecap so that its right side faces left. Align the marks, and insert and turn the eyecap clockwise until it locks with a click.

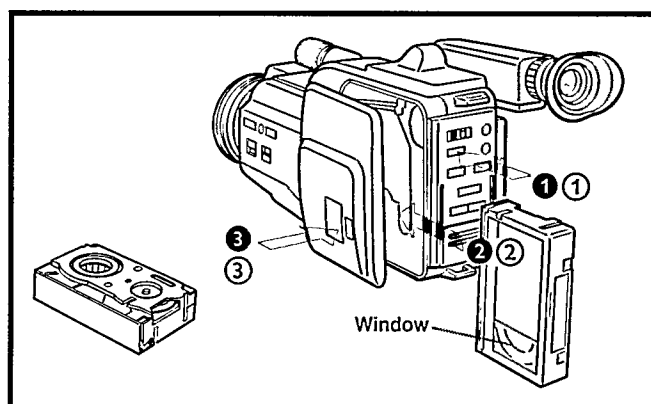
The videocassette

Before inserting the cassette

Make sure that the tape is not loose. If it is loose, pull it in by turning the cog wheel on the side of the cassette in the direction of the arrow.



Inserting the video cassette



- ① Press the Eject button.
- ② Insert the video cassette into the cassette compartment with its window facing outside.
- ③ Push the cassette compartment cover inward, until it locks with a click.

- Use **VHS-C** video cassettes only.
- When a power supply unit (battery pack, AC Adapter or car battery) is connected to the VHS-C Camcorder, the Eject button remains operative, even if the VHS-C Camcorder has been switched off with the Power switch.

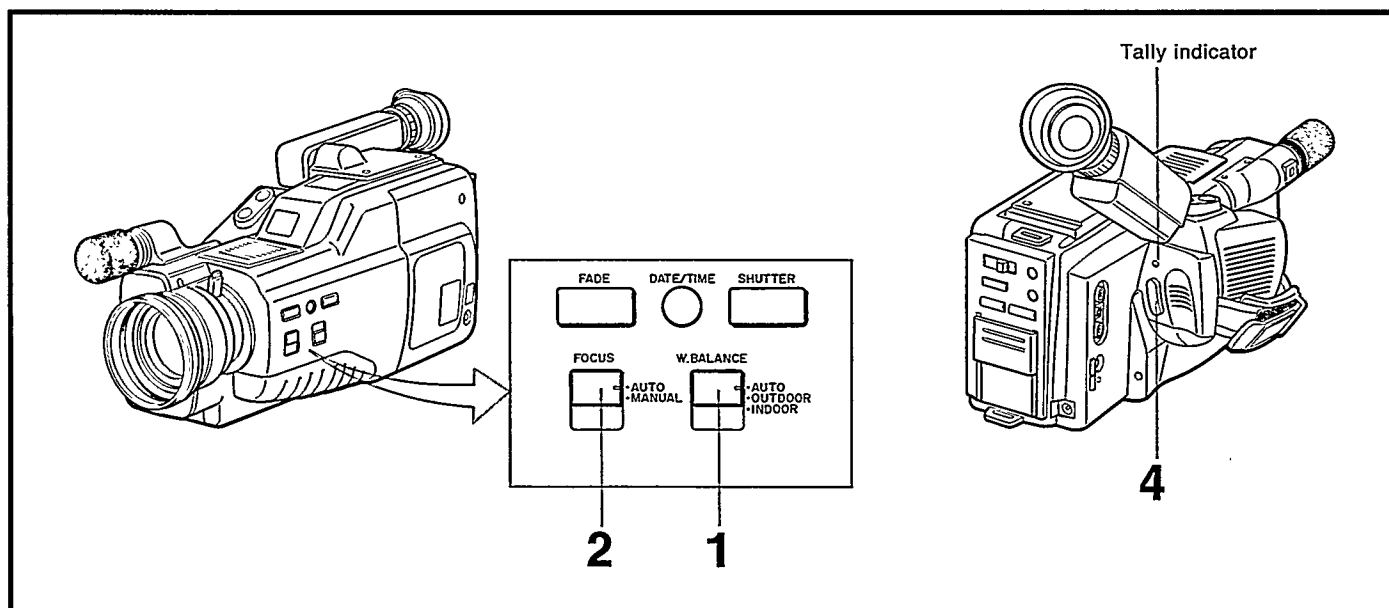
Removing a video cassette

- ① Press the Eject button.
- ② Pull out the video cassette.
- ③ To close the cassette compartment, push the cassette compartment cover inward, until it locks with a click.

Camera recording

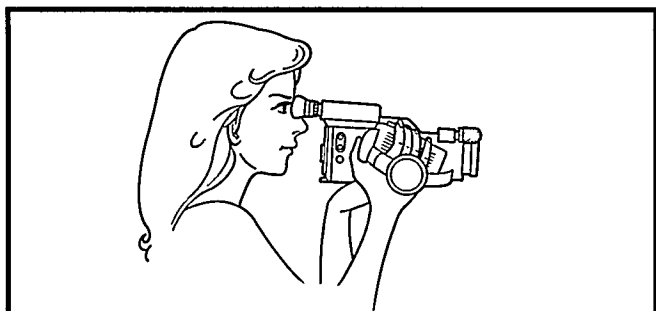
Preparations

1. Slide the Camera/VCR selector cover closed so that it covers the tape running buttons.
2. Slide the Power switch to turn the VHS-C Camcorder on.
3. Insert a video cassette with the erasure prevention tab intact.
 - A few seconds later, the VHS-C Camcorder will change over to the recording pause mode.



Operation

- 1 Set the White Balance mode selector to "AUTO".
For more details, see page 16.
- 2 Set the Focus mode selector to "AUTO".
For more details, see page 17.
- 3 Place the VHS-C Camcorder in the shooting position.



- Grasp the handgrip and adjust the length of the grip belt with the velcro tape closure to the size of your hand.
- Attach the lens cap to the grip belt.

- 4 Press the Start/Stop button.
 - The recording indication "REC" is displayed in the EVF and the recording starts. The tally indicator keeps lit during recording.

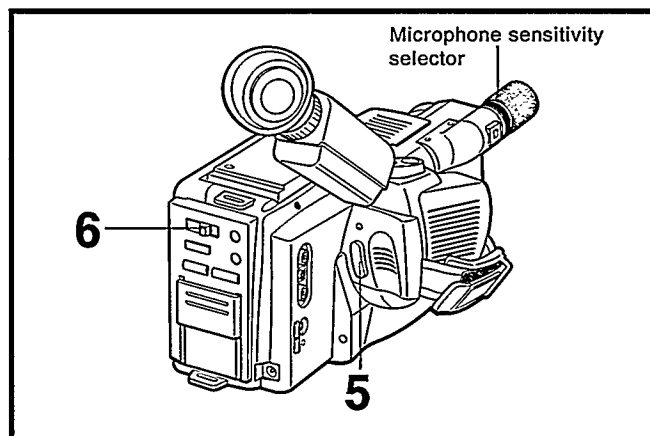
- 5 To temporarily stop the recording (recording pause), press the Start/Stop button again.

- 6 To finish the recording, put the VHS-C Camcorder in the recording pause mode and then slide the Power switch again to turn the VHS-C Camcorder off.

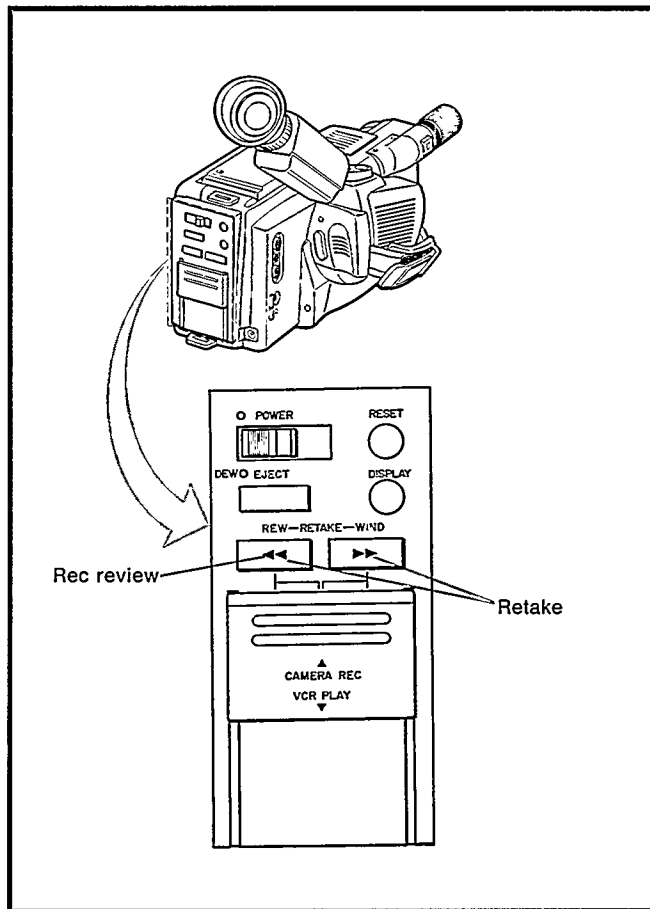
Microphone sensitivity selector

The sensitivity of the microphone can be increased by setting the microphone sensitivity selector to "HIGH". Usually, this selector is left in the "NORMAL" position.

- If this selector is switched from "HIGH" to "NORMAL" during recording, the recording of the audio signal will be interrupted for a few seconds. However, this is not due to any malfunction.



Confirming recording scenes



Retake for checking

longer recorded scenes.

Rec Review for a quick check

of the end of a recorded scene.

Retake Function

(Sound is not reproduced)

In the recording pause mode, a recorded scene can be played back at high speed in reverse direction by keeping the ◀◀/REW Button pressed. Review Speed is 3 times higher than normal play back, and it can then be played back at normal speed in forward direction by keeping the ▶▶/WIND Button pressed.

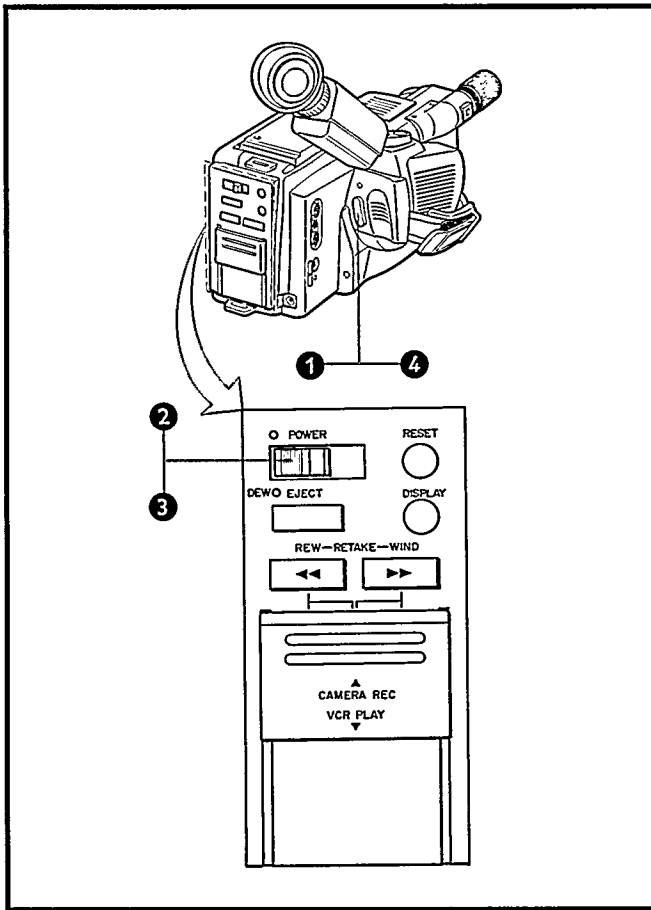
When the button is released, the VHS-C Camcorder will return to recording pause mode.

Rec review function

Press the Rewind/Review button once whilst the VHS-C Camcorder is in the recording pause mode.

- The last 3 seconds of the recorded scene will be played back and the VHS-C Camcorder will again stop in the recording pause mode, ready for further recording.
- If the VHS-C Camcorder is left in the Record pause mode for more than 6 minutes:
The VHS-C Camcorder will automatically switch over to the power off mode to protect the tape and save battery power.
- When the tape reaches its end during recording, the VHS-C Camcorder will automatically switch over to the stop mode.

To save power and extend the life of the battery pack



During recording

- 1 Press the Start/Stop button to stop the recording.

Recording pause

- 2 Slide the Power switch to turn the VHS-C Camcorder off.
 - The operation lamp will go off.
 - No picture can be seen in the EVF.
 - As the tape is left wound around the head cylinder, the VHS-C Camcorder will automatically switch itself off after 2 days (about 48 hours) if it is left in this condition.

Recording stop

- 3 Slide the Power switch again to make the VHS-C Camcorder ready for recording the next scene.
 - It takes about five seconds for the picture in the EVF to become stable.

Recording pause

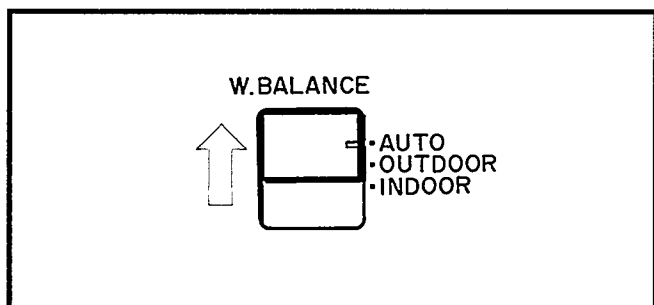
- 4 Press the Start/Stop button to start recording again.

- When the VHS-C Camcorder is in the recording pause mode, the use of battery power can be temporarily suspended by operating the Power switch. Operating this switch a second time will put the VHS-C Camcorder back into the recording pause mode, so it will be ready again to start recording.

Advanced videography techniques

White balance

The VHS-C Camcorder, like any other video camera, responds differently to colours depending on the weather and the time, even under seemingly same sunlight. The adjustment necessary to assure natural colour rendition is called "white balance adjustment".



AUTO : The white balance is automatically adjusted as the illumination changes.

In certain cases, the use of the preset positions is recommended:

INDOOR : When shooting under the light from incandescent light bulbs or halogen lamps.

OUTDOOR : When shooting outdoors under the sunlight.

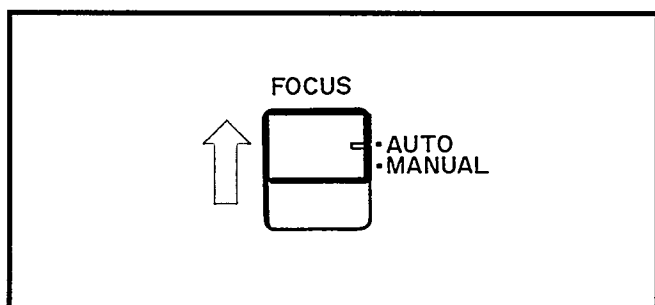
Cautions for use of the Auto White Balance adjustment mode

In the Auto mode, the sensors built into the front of the VHS-C Camcorder detect the colour temperature of the illumination of the scene and automatically adjust the white balance. In the following shooting conditions, the Auto mode may not provide exact white balance adjustment.

1. When the illumination of the subject is different from the light that falls on the VHS-C Camcorder.
2. When either the VHS-C Camcorder or the subject is in the shade.
3. When extremely bright light sources are used, such as mercury-vapour lamps, sodium lamps or some types of fluorescent lamps.
4. When the illumination is not bright enough (approx. 15 lux).
5. When the scene has strong red-coloured illumination, e.g. during sunrise and sunset.
6. When intensive light hits only the red or the blue light sensor in the window.
7. When there is some other light source that is outside the sensing range of the white balance adjustment sensors, e.g. snowy landscape, cloudy weather, incandescent light and candlelight.
8. When there is some object placed in front of the sensor window that prevents light from reaching it.
9. When shooting in the macro range, the Auto mode does not operate. Therefore, use the "INDOOR" or "OUTDOOR" position.

Focus

Auto focus



Set the Focus mode selector to "AUTO".

- While watching the picture in the EVF, aim the VHS-C Camcorder at the subject on which you want to focus.



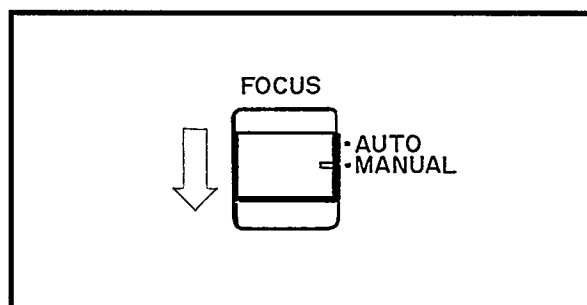
Every time the VHS-C Camcorder is switched on, the focusing zone frame is automatically appeared in the EVF. The focus is adjusted to the subject in this zone.

Note:

This Auto focus system does not measure the actual distance but adjusts the lens to the optimum focusing condition based on the video signal. Therefore, the distance setting on the lens may be different from the actual distance in some cases. However, this is not an indication of a malfunction.

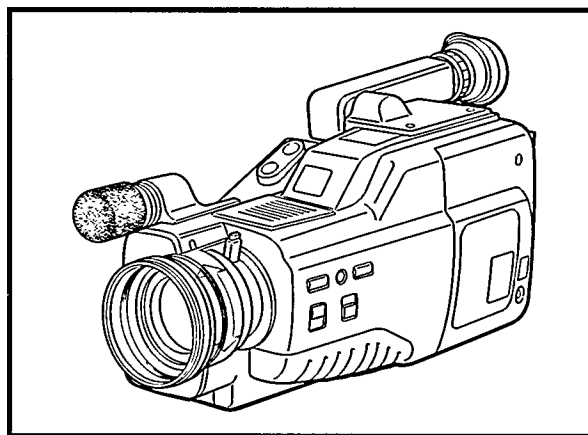
Manual focus

1



Set the Focus mode selector to "MANUAL".

2



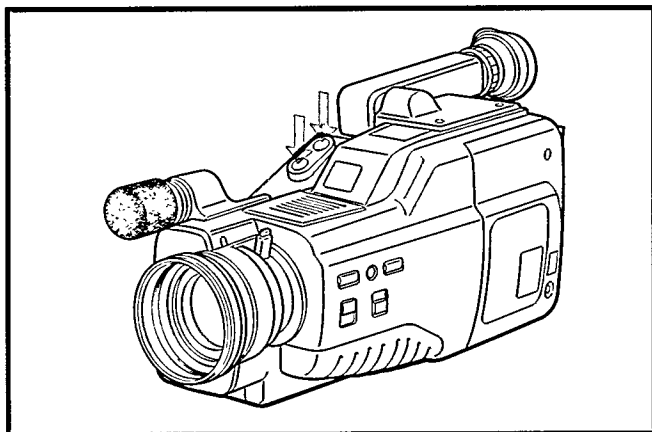
Turn the Focus ring to adjust the focus.

In the following shooting conditions, the Auto Focus system will not be able to provide stable and exact focus adjustment. Set the Focus mode selector to "MANUAL" in such cases and adjust the focus by turning the Focus ring.

1. When shooting a subject through dirty glass.
2. When shooting subjects with shiny surfaces.
3. When shooting a subject with a part of it near and another part far from the VHS-C Camcorder.
4. When shooting an oblique subject.
5. When shooting a subject with distinct horizontal stripes.
6. When shooting a flat subject such as a white wall.
7. When no part of the subject is within the focusing zone frame.
8. When shooting with the macro close-up function or with special lenses or filters.
9. When shooting a fast-moving subject.
10. When shooting a dark subject.

Zooming

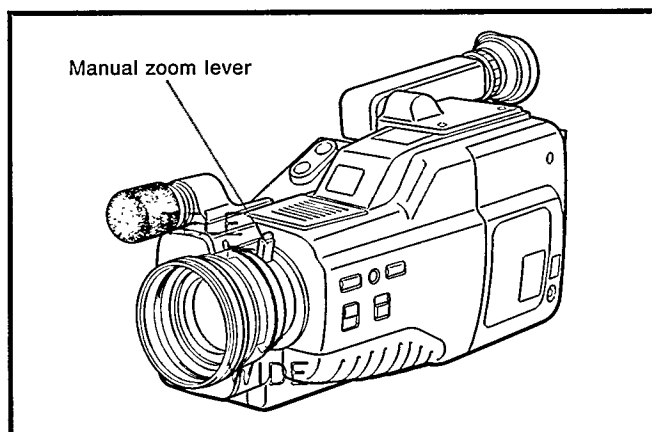
Power zooming



To zoom to wide-angle, press the "W" button.

To zoom to telephoto, press the "T" button.

Manual zooming

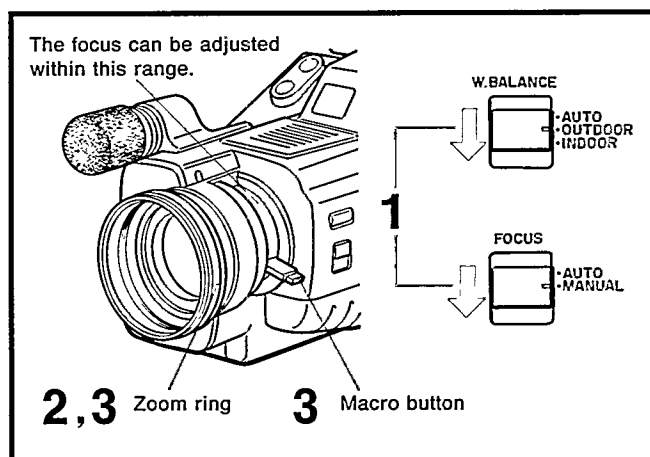


Use the Manual zoom lever.

Macro close-up

Shooting small objects

The macro function allows shooting small plants and tiny insects. It is also possible to shoot photos from a photo album. The focus can be adjusted within a distance of 1.2 m.



- 1** Set the White Balance mode selector to the "INDOOR" or "OUTDOOR" position and set the Focus mode selector to "MANUAL".
- 2** Turn the Zoom ring all the way down to the click stop.
- 3** Press the Macro button and again turn the Zoom ring down. Turn the Zoom ring slowly and focus on the desired object.

Lighting

Standard values of brightness

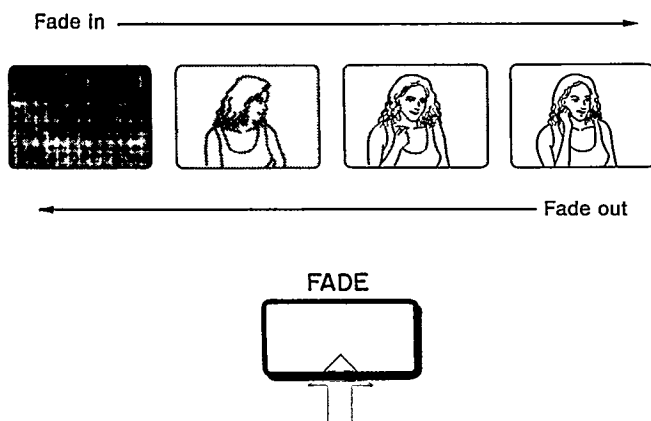
(lux) (Place or Daylight)

10—15	● Candlelight
400—500	● Office with fluorescent lamps
500—700	● Department store counter
1000	● Sunlight one hour before sunset, clear day
2000	● Sunlight one hour after sunrise, cloudy day.
25000	● Sunlight at 10 AM, cloudy day
32000	● Sunlight at noon, cloudy day
35000	● Sunlight at 3 PM, clear day
65000	● Sunlight at 10 AM, clear day
100000	● Sunlight at noon, clear day

Fade-in/Fade-out

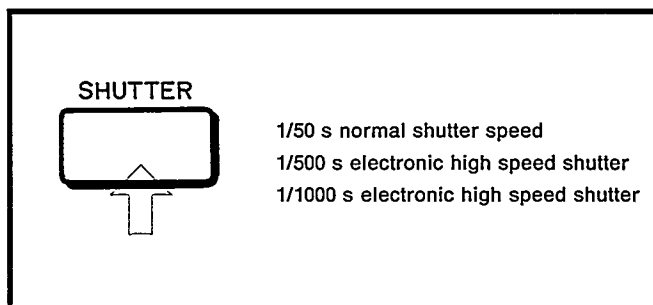
Fading out a scene to black is possible by keeping the Fade button pressed, and fading in from black is operated by releasing this button.

The sound is also faded out and faded in together with the picture.

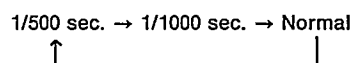


High speed shutter

The VHS-C Camcorder has 3 different shutter speeds:



By repeatedly pushing the High Speed Shutter Selector, the shutter speed can be changed as follows:



For videographing of fast movements, the shutter speed can be set to 1/500 or 1/1000 with the HIGH SPEED SHUTTER selector.

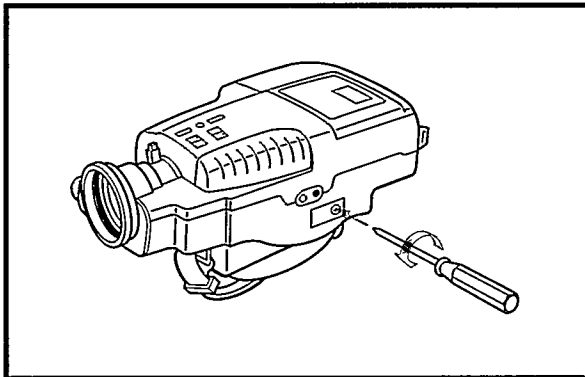
With a video recorder equipped with the playback functions still playback, still advance and fine slow motion, sharp-contoured pictures can be played back in these functions.

- The following conditions are required for shooting with the High Speed Shutter function:
The subject must be brightly lit, with little shade, under sunlight or some other illumination of more than 300 lux.
- If shooting under the illumination produced by fluorescent lamps, the picture will be adversely influenced by flickering.
- If the picture is played back in the normal playback mode, the movements may appear to be not very smooth.
- The playback picture will be slightly darker than the picture recorded without using the High Speed Shutter function.

Recording the date/time

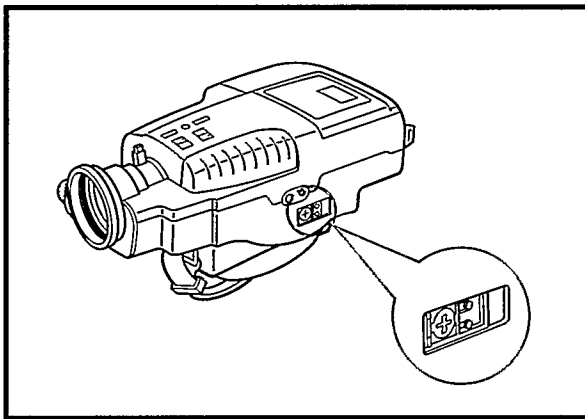
How to insert the battery for the date/time operation

1



Remove the lid on the bottom of the VHS-C Camcorder with a screwdriver.

2



Insert the "LR1130" size battery with the polarities (+ and -) aligned correctly and then replace the lid.

- The clock starts working as soon as the battery is inserted.

The "LR1130" size battery (supplied) is necessary for the operation of the built-in digital clock, and to memorize the Date/Time indications when the VHS-C Camcorder is turned off.

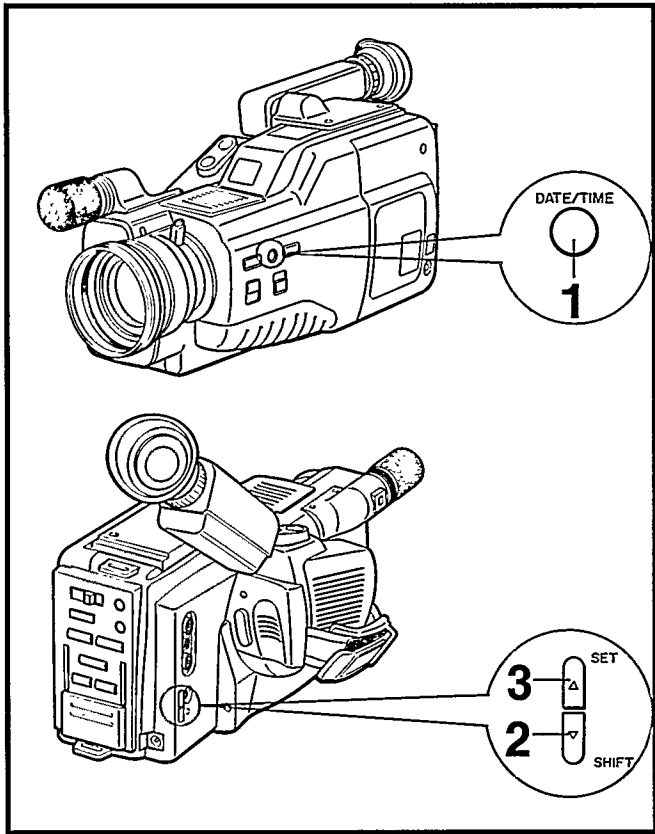
CAUTIONS:

- When this battery is almost exhausted, the whole time and date indication will flash.
- When this battery is completely exhausted, the indication "PLEASE SET BATTERY" will appear.
- To make this indication disappear, press the Date/Time selector twice.
- If this indication is still displayed after the battery has been replaced, turn the VHS-C Camcorder off and then on again.

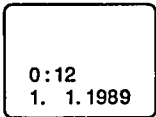
CAUTIONS FOR BATTERY REPLACEMENT

- The life of the battery is about one year, however, it depends on the frequency of use. Inspect and if necessary, replace the battery once a year.
- Load the new battery with their polarities (+ and -) aligned correctly.
- Do not apply heat to battery, or internal short-circuit may occur.
- Remove spent battery immediately and dispose of it.

Setting of the date/time



1 When the Date/Time selector is pushed, the indication shown on the below will appear in the EVF.



- If no battery is inserted, the indication "PLEASE SET BATTERY" will light up. In this case, insert the battery as described on page 20.

2 When the Shift button is pushed, the flashing portion displayed will be changed in the following sequence.

YEAR → MONTH → DATE → HOUR → MINUTE

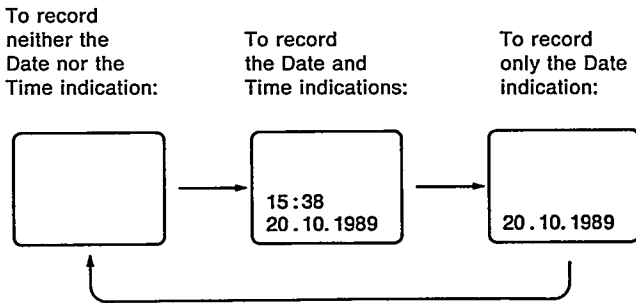
3 When the Set button is pushed, the flashing portion displayed will be changed in the following sequence.

YEAR: 1989 → 1990 → → 1986 → 1987 → 1988
 MONTH: 1 → 2 → → 12
 DATE: 1 → 2 → → 28 → (29) → (30) → (31)
 HOUR: 0 → 1 → → 23
 MINUTE: 00 → 01 → → 59

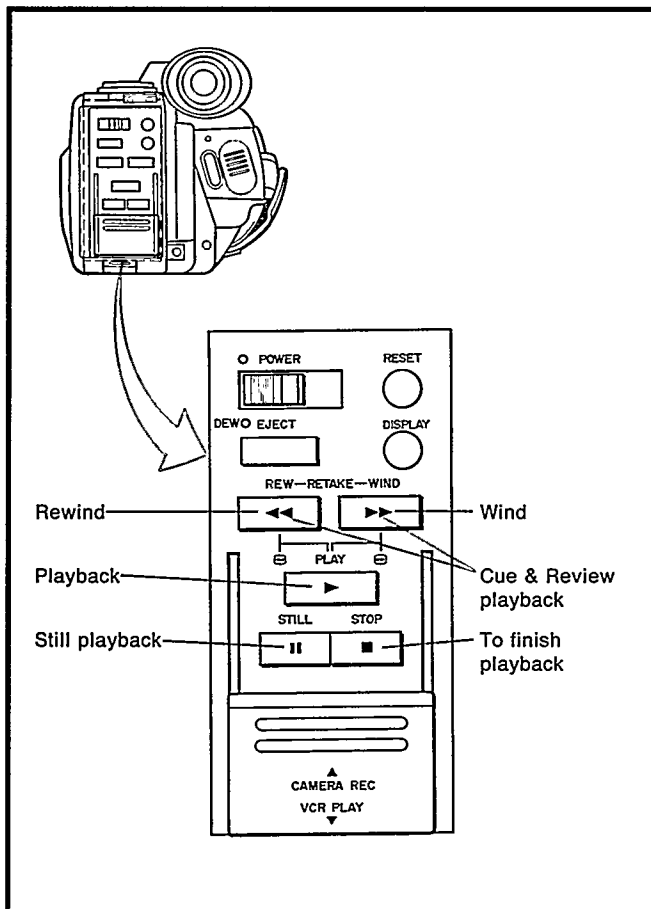
- Repeat procedures 2 and 3 until all five items have been set.
- Once the time and date are set, press the Shift button in response to a precise time signal so that the clock may begin to function.

Recording the Date/Time indications

When the Date/Time selector is pushed repeatedly, the indication will change in the following sequence.



Playback



Preparations

1. Slide the Power switch to turn the VHS-C Camcorder on.
2. Insert a recorded tape.
3. Slide the Camera/VCR selector cover open so that the tape running controls become accessible.
4. For playback via a TV set, see "Cable connections" on pages 24 and 25.

Wind

Press the Wind/Cue button to rapidly wind the tape forward.

- The tape will stop automatically when it reaches its end.

Rewind

Press the Rewind/Review button to rewind the tape.

- The tape will stop automatically at the beginning of the tape.

Playback

Press the Play button.

- The tape will be rewound automatically when it reaches the end.

Cue & Review playback

When the Wind/Cue button or the Rewind/Review button is kept pressed while the VHS-C Camcorder is in the playback mode, the tape will be played back at high speed in forward or reverse direction.

Still playback

When the VHS-C Camcorder is in the playback mode, press the Still button to view a still picture. To continue the normal playback, press this button again.

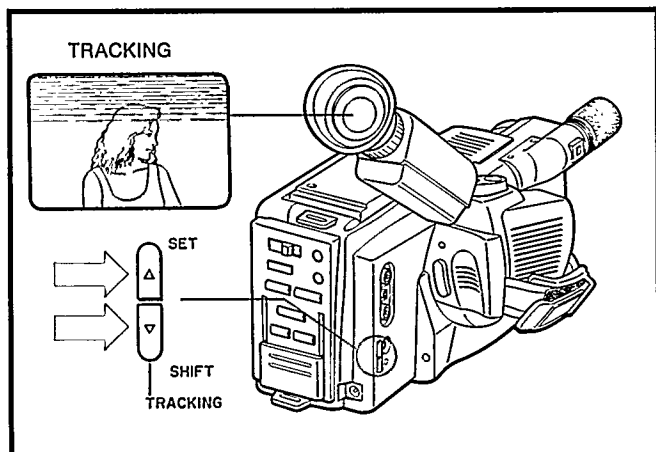
To finish playback

Press the Stop button.

Note:

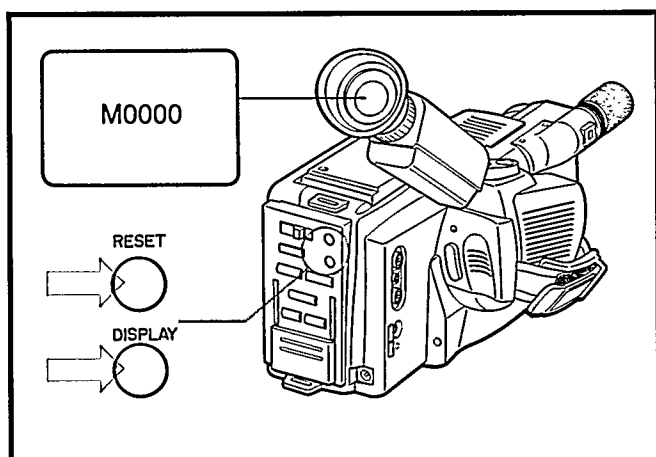
- A tape recorded in LP mode cannot be play backed in this VHS-C Camcorder.

Tracking control



- When the playback picture contains noise bar distortion as shown in the picture above, it can be eliminated by pressing the tracking Up ▲ or Down ▼ button. To return the tracking control to the former setting, press the two buttons simultaneously.
- When playing back a tape which has been recorded on another video recorder, it may not be possible to completely eliminate this distortion.
- If the VHS-C Camcorder is left in the Still playback mode, for more than about 6 minutes, the VHS-C Camcorder will switch over to the stop mode to protect the tape and the video heads.
- Noise which takes the form of horizontal bars appears in the Cue, Review and Still playback modes. This is not an indication of a malfunction.

Tape counter and memory function



Press the Reset button at a desired point and then press the Display button.

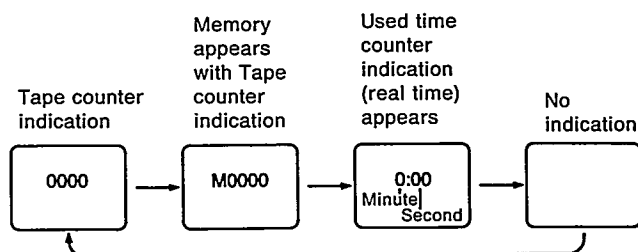
- The Tape counter is reset to "0000" and the memory indicator "M" appears.

After pressing the Stop button to end the playback, press the Rewind/Review button.

- The tape will automatically stop at about the point where the Tape counter reads "0000".

Counter indication

By repeatedly pressing the Display button, the counter indication can be changed in the following sequence.



- The indication of the used time counter counts up only during recording.

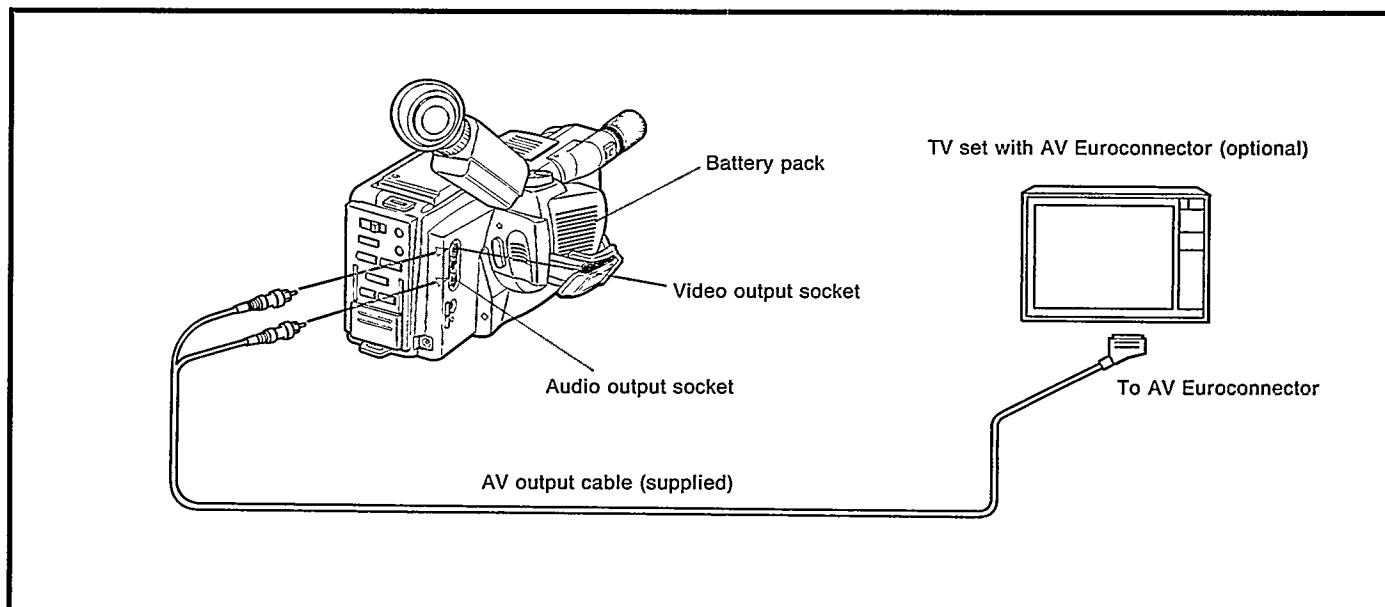
Remaining battery power indication

The remaining power indicator E _ _ _ F is always seen when counter, memory or used time is activated.

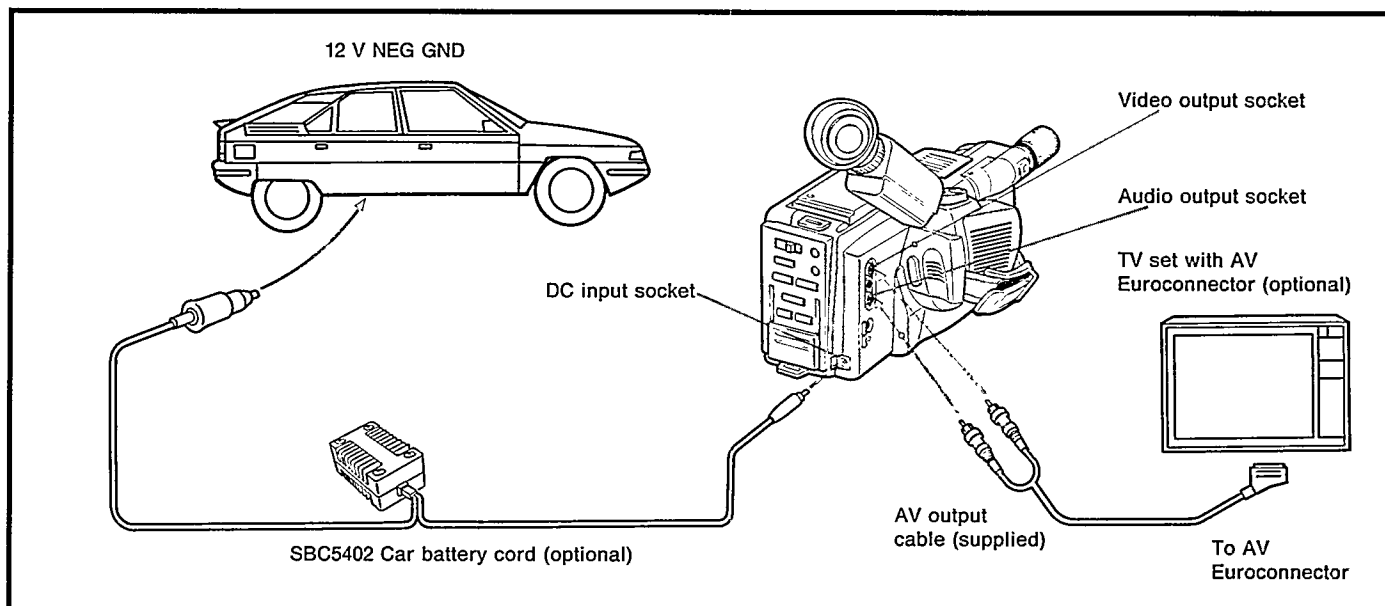
Cable connections

Connection to a TV set with AV Euroconnector

When using the battery pack as power source

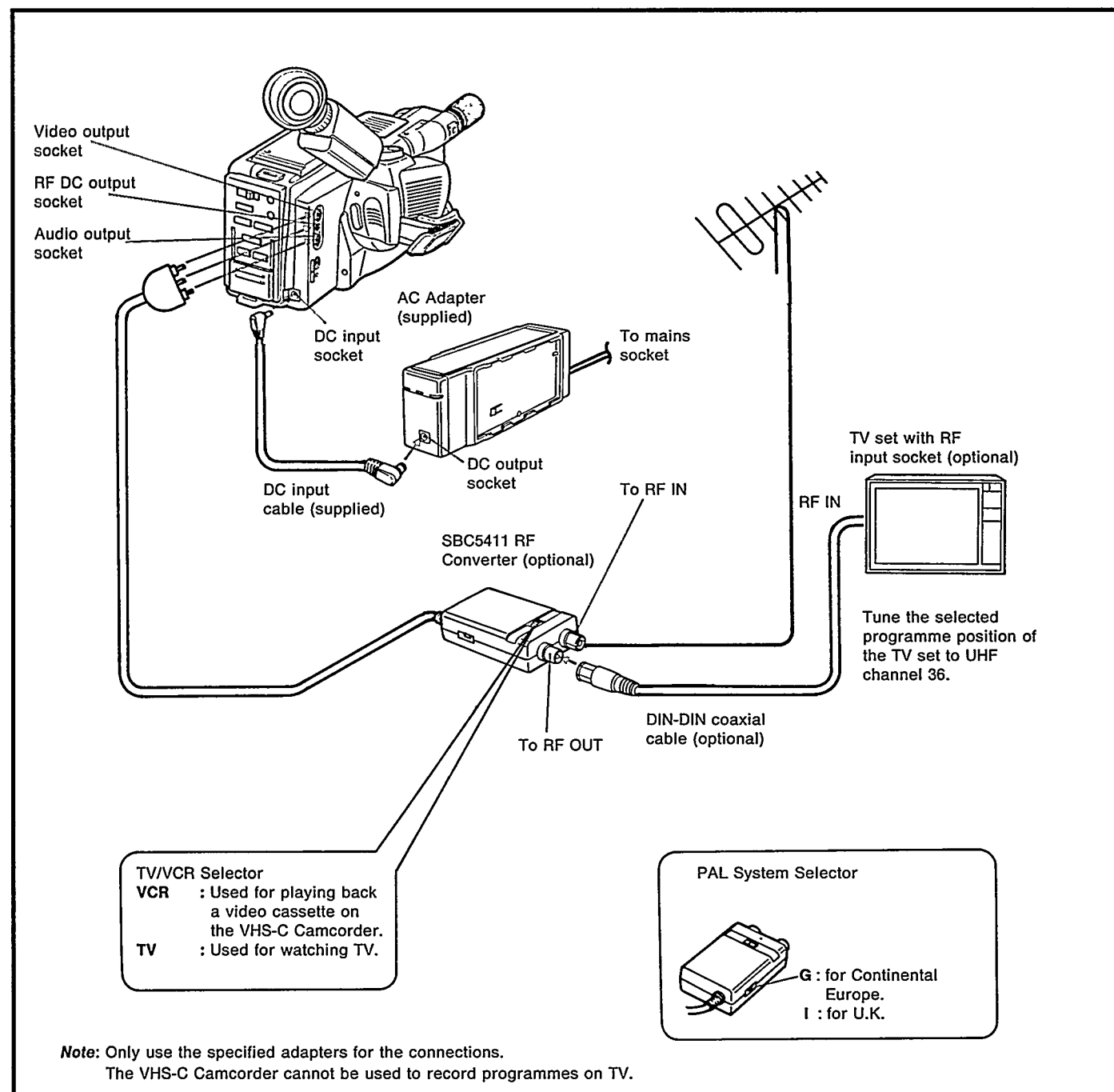


When using a car battery cord as power source



Connection to a TV set without video and audio input sockets

The supplied AC Adapter and optional RF Converter are required

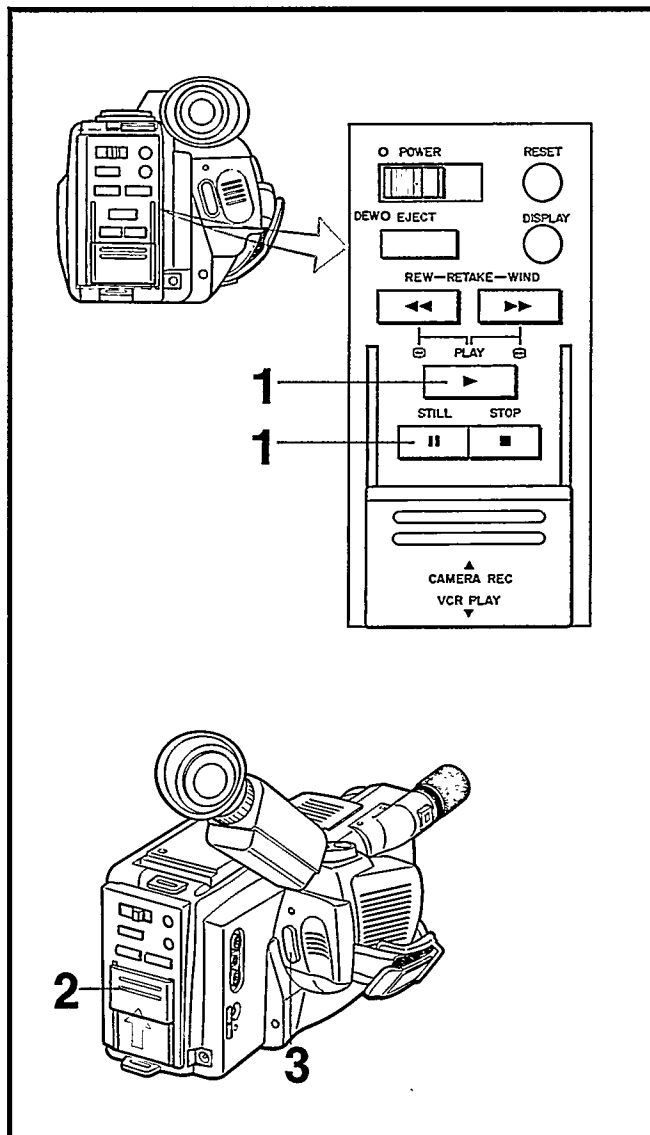


Assemble editing

The built-in flying erase head makes assemble editing free from colour distortion and colour stripes at the editing points possible.

Preparations

1. Insert a video cassette with the erasure prevention tab intact.
2. Slide the Camera/VCR select cover open.

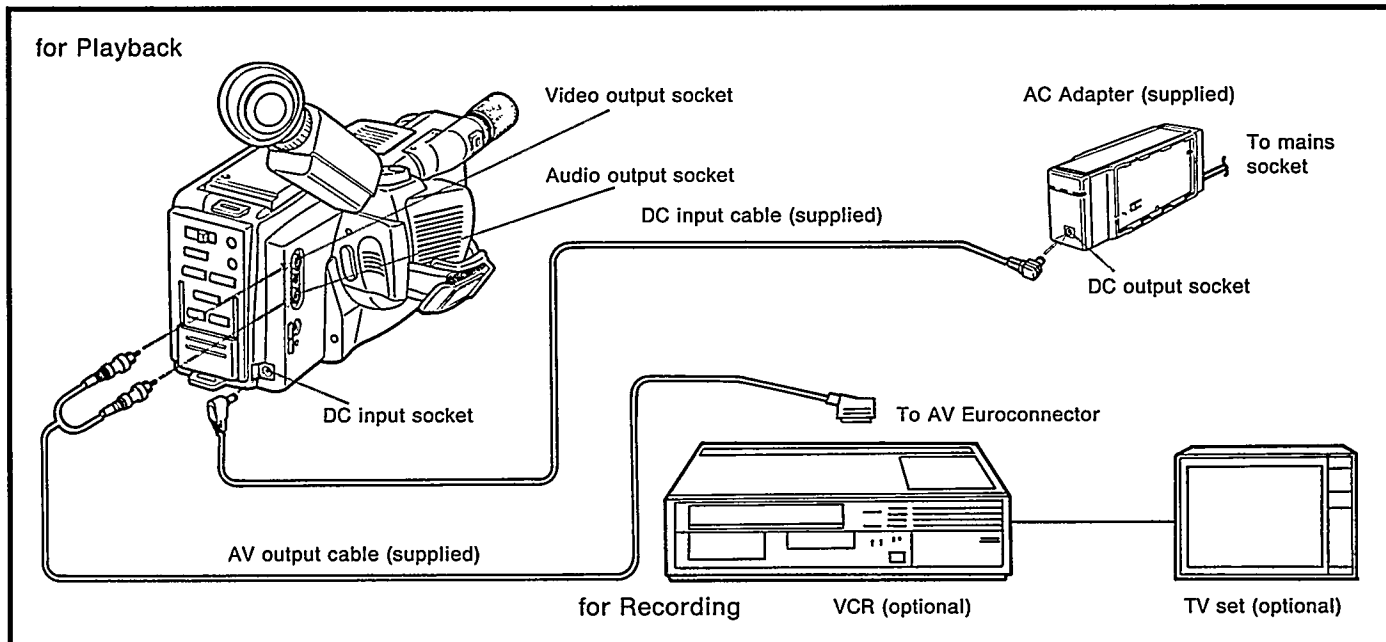


Operation

- 1 Press the Play button to locate the point where the new recording is to be joined (Assemble Editing), and press the Still button at the desired point.
- 2 Slide the Camera/VCR selector cover closed so that it covers the Tape running buttons.
- 3 Press the Start/Stop Button.

Dubbing (copying)

Connection of the VHS-C Camcorder with a VCR

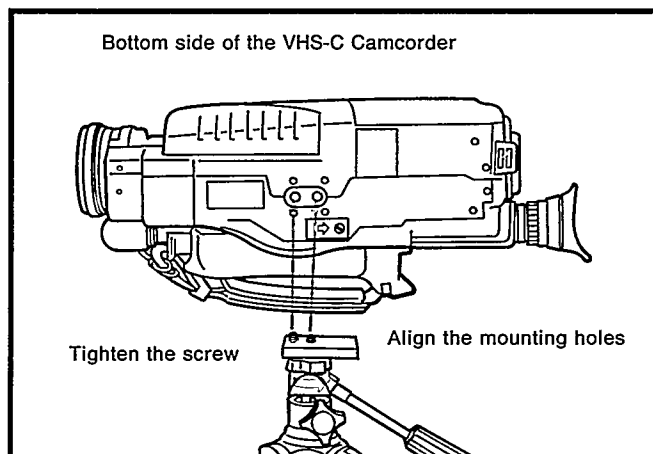


- 1** Place the VCR into the recording pause mode, at the point on the tape where you wish to record the picture from the recorded cassette in the VHS-C Camcorder recording.
- 2** Locate the exact point on the tape in the VHS-C Camcorder from where you want to start copying and put the VHS-C Camcorder into the still playback mode.
- 3** Press the Still button on the VHS-C Camcorder and the Still button on the VCR to start the copying.

- The picture quality of a copied tape is inferior to that of the original tape.
If the VCR used for copying features 2 tape speeds, select the normal speed (SP mode) for the best result.
- When a tape, that was originally recorded on the VHS-C Camcorder and that later had some scene added on a VCR by using the Insert Editing function, is again played back on the VHS-C Camcorder, the playback of the inserted part may be affected by uneven colour and coloured stripes.

Using optional accessories

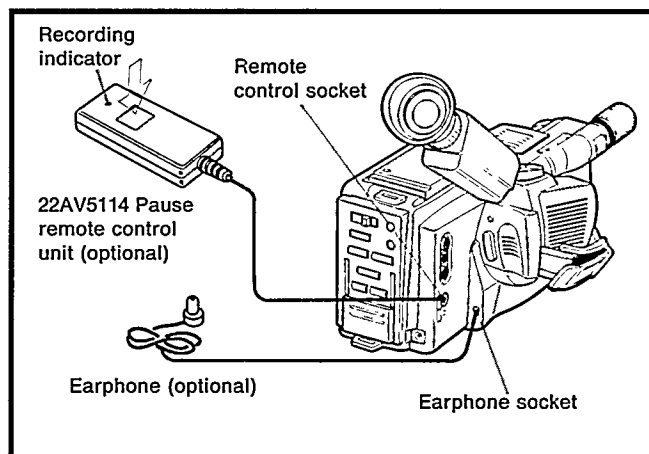
How to mount the VHS-C Camcorder on a tripod (optional)



- Place the tripod on a stable surface, with its legs fully spread.

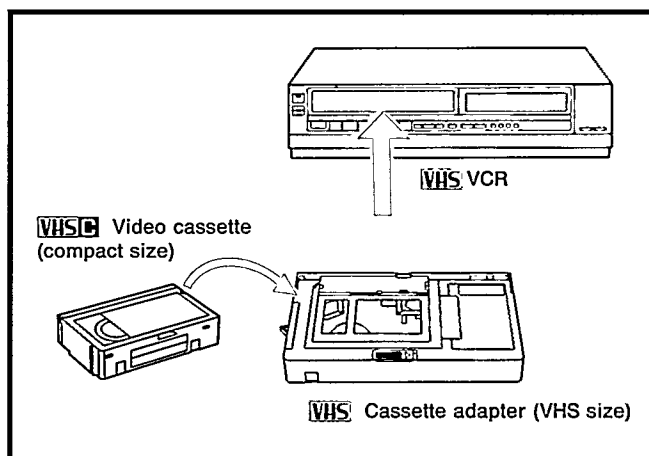


How to use the pause remote control unit and earphone



Playback on a VCR

- Use 22AV5146 VHS Cassette adapter (optional).
For details about operating the VHS Cassette adapter, see the Operating instructions of the VHS cassette adapter.



In case of difficulty

Symptoms	Check points
Power source	
The power does not switch on.	● Is the power supply unit correctly connected to the VHS-C Camcorder?
The power switches on, but it switches off again immediately.	● If the battery pack is exhausted, replace it with a fully charged one. ● If condensation has formed, wait until it has dissolved.
Camera recording	
The power is on, but no picture appears in the EVF.	● Is the lens covered with the lens cap?
Camera recording cannot be performed.	● If the tab of the cassette is broken out, cover the tab hole with adhesive tape.
The picture is not clear.	● Is the eyepiece correctly adjusted to your eyesight? ● Is the lens surface dusty?
The Auto focus system does not provide optimum focus adjustment.	● Is the Focus mode selector set to "AUTO"? ● For shooting conditions where the "AUTO" setting of the Focus mode selector cannot provide optimum focus adjustment, set the selector to "MANUAL" and adjust the focus.
Playback	
No playback picture is reproduced.	● Is the connection to the TV set correct? ● Is the TV set tuned to the video playback channel?
The colours are not correct.	● Is the colour adjustment of the TV set correct?
The playback picture is not in colour.	● The playback picture has large amounts of "snow". ● Adjust the tracking. ● If the tape is old, use a new tape.

Specifications

VHS-C Camcorder

Power source	: DC 9.6 V
Power consumption	: Recording mode; 7.6 W (battery operation)
Video recording system	: 5 rotary heads (1 flying head), helical scanning system
Tape speed	: 23.29 mm/s
Tape format	: VHS-C tape
Recording/Playback time	: 30 min. with EC-30 XHG

VIDEO

Television system	: CCIR; 625 lines, 50 fields PAL colour signal
Modulation system	: Luminance; FM azimuth recording Colour signal; Converted subcarrier phase shift recording
Output level	: ADAPTER (Multi); 1.0 Vp-p 75 ohm unbalanced

AUDIO

Input level	: MIC IN (M3); -70 dB 4.7 kohm unbalanced
Output level	: ADAPTER (Multi); -8 dB 1 kohm unbalanced
Audio track	: 1 track (MONO)
Image sensor	: 1/2-inch CCD image sensor
Lens	: 6:1 Power Zoom Lens with MACRO Function, Auto Iris. Auto Focus System F 1.2 (9—54 mm) Lens Front Diameter 49 mm
Viewfinder	: 2/3-inch Electronic Viewfinder
Standard illumination	: 1,400 Lux
Minimum required illumination	: 10 Lux
Video horizontal resolution	: Colour; More than 250 lines
Signal-to-Noise ratio	: Video; More than 43 dB Audio; More than 43 dB
Audio Frequency Response	: 80 Hz—8 kHz
Operating temperature	: 0°C—40°C
Operating humidity	: 20%—80%
Weight	: Approx. 1.3 kg (without battery pack)
Dimensions	: 124 (W) x 141 (H) x 338 (D) mm

AC-Adapter (SBC5413)

Power source	: AC 100—240 V, 50—60 Hz (Automatic voltage adjustment)
Power consumption	: 25 W
DC output	: DC 9.6 V 1 A (VHS-C Camcorder) DC 9.6 V 0.86 A (Battery pack charging)
Weight	: Approx. 0.56 kg
Dimensions	: 53 (W) x 68.5 (H) x 191 (D) mm

Weight and dimensions shown are approximate.

Specifications are subject to change without notice.

(GB)	IDENTITY CARD	This card, together with the terms of guarantee (to be provided by your dealer), forms the full certificate of guarantee for this appliance
(D)	GERÄTE-KENNKARTE	Diese Karte ist, zusammen mit den Garantiebestimmungen, die Ihr Händler Ihnen aushändigt, Ihr Garantieschein für dieses Gerät
(F)	CARTE D'IDENTIFICATION	Associée aux conditions de garantie (qui vous sont remises par le revendeur), cette carte constitue le certificat de garantie de cet appareil
(NL)	IDENTIFICATIEKAART	Deze kaart vormt, samen met de garantievoorwaarden (welke door uw dealer is verstrekt worden), het garantiebewijs voor dit apparaat
(I)	CARTE D'IDENTIFICAZIONE	Questa cartolina rappresenta insieme alle condizioni di garanzia (da consegnare dal vostro rivenditore) il documento di garanzia per questo apparecchio
(E)	TARJETA DE IDENTIFICACION	La garantía de este aparato se compone de esta tarjeta y de las condiciones de garantía que le entregará su concesionario
(P)	CARTÃO DE IDENTIFICACÃO	Este cartão, em conjunto com as condições de garantia em vigor (explicadas pelo seu vendedor) constituem o certificado de garantia do seu aparelho
(DK)	ID KORT	Dette kort, udfyldt af Deres forhandler, er tilstrækkelig garantidokumentation for dette apparat
(N)	IDENTIFIKA-SJOSKORT	Dette kort, sammen med garantibetingelsene (som De får av forhandleren) utgjør garantibeviset for dette apparat
(S)	IDENTIFIERINGSKORT	Detta kort tillsammans med garantivillkoren, som Du får av radiohandlaren, utgör ett fullständigt garantibevis för denna produkt
(SF)	TUNNISTUS-KORTTI	Tämän laitteen takuutodistus muodostuu tasta kortista ja takuuehdoista (jälleenmyyjä antaa mukaan)
(GR)	ΔΕΛΤΙΟ ΤΑΥΤΟΤΗΤΑΣ	Η καρτέλλα αυτή μαζί με τους όρους εγγυήσεως (που θα προμηθευθείτε από το κατάστημα που αγοράσατε την συσκευή), αποτελούν το πλήρες πιστοποιητικό εγγυήσεως της συσκευής σας